

REMARKS

Claims 1 through 3, 5, 7 and 9 through 17 and new Claims 22 through 24 are pending in the application.

Claim 1 has been amended to reflect that the plastics film has been stretched alone at the recited temperature range. Support for this amendment can be found in the Application-as-filed.

Claims 22 through 24 have been added to complete the record for examination and highlight advantageous embodiments of the invention.

Claim 22 is directed to advantageous embodiments in which the film is metallized. Support for Claim 22 can be found in the Application-as-filed, for example on Page 7, lines 20 through 25.

Claim 23 is directed to advantageous inventive films which are a monofilm and the film has a negative transverse heat shrinkage of from about 5 to 8 %. Support for Claim 23 can be found in the Application-as-filed, for example on Page 10, lines 23 through 25.

Claim 24 is directed to advantageous inventive films consisting essentially of at least one rigid polyvinyl chloride film and, optionally one or more of metallization, coating, lacquer and printing. Support for Claim 24 can be found in the Application-as-filed, for example on Page 6, lines 3 through 22 and Page 7, line 30 through Page 8, line 2, as well as on Page 8, lines 15 through 20.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

The Claimed Invention is Patentable

In Light of the Art of Record

Claims 1 through 3, 5, 7 and 9 through 17 remain rejected over Hughen et al (US 5,747,192) in view of Tyson (GB 11 86 531). Claims 12, 14 and 17 apparently remain rejected over Hughen in view of Tyson and further in view of Yoshiga et al (US 4,264,010).

The cited references do not teach or suggest the claimed invention.

Hughen et al disclose (col. 2, lines 43 - 67) a single ply label for dry cell batteries. The label is formed of a self-supporting, heat shrinkable, polymer film backing. The width of the film backing provides at its ends first and second opposed longitudinal edges and is sufficient for the backing to embrace the case of the battery. The length of the film backing is sufficient for the backing to extend beyond the length of the battery case. Suitable film backings include polypropylene and the like (col. 5, lines 51 - 54). The polymer film backing further supports a non-conductive pigmented layer formed of alkali-resistant ink. (col. 4, lines 20 - 25 and col. 6, lines 18 - 22). Hughen expressly notes that the non-conductive pigmented layer eliminates the need for a metal layer, and this elimination is indicated to be "critical" to the invention. (col. 4, lines 45 - 47).

Applicants respectfully reiterate that Hughen does not teach or suggest the claimed invention.

Applicants respectfully reiterate that Hughen fails to teach or suggest rigid polyvinyl chloride film, as recited in the claimed invention. Hughen instead merely discloses a "self-supporting" film, which the Office Action incorrectly equates with a "rigid" film. Applicants respectfully submit that "rigid PVC" is a well-known term of art referring to PVC incorporating less than 12 % plasticizer. Hughen, disclosing conventional monoaxially oriented PVC, does not teach or suggest the recited rigid PVC.

Applicants further respectfully reiterate that there is no teaching in Huguen of a calendered plastics film composed of rigid polyvinyl chloride having a width up to about 2010 mm. Huguen instead merely discloses a single ply label for labeling a dry cell battery formed of a heat shrinkable polymeric backing. As described in Huguen at col. 7, lines 26-33 and Fig. 4, the labels 24 on web of release material 44 are caused to pass over a dispensing edge 46, are released from the web of release material and adhere onto the surface of advancing battery 10. Huguen does not disclose the width and length of the backing film, however. Thus the Office Action is incorrect in its assertion that Huguen discloses a single ply label with a film having a maximal width of 2010 mm.

Huguen, silent with regard to the stretching temperatures, additionally fails to teach or suggest the inventive films which are calendered from 180 to 60 °C in the machine direction.

Nor does Huguen disclose a negative shrinkage of up to 10%, as further urged within the outstanding Office Action. Applicants respectfully submit that (i) with positive shrinkage a film becomes shorter and (ii) with negative shrinkage a film elongates. Applicants thus respectfully make of record that Huguen's "shrink back" during storage refers to positive shrinkage.

Huguen does disclose some shrinkage perpendicular to the machine direction of the plastics film. However, Huguen does not disclose a negative shrinkage of up to 10 %, as recited in Claim 2. Huguen instead merely teaches a negative shrinkage up to 2 %. In fact, Huguen considered as a whole teaches away from the beneficial embodiments of Claim 2 teaching a preference for positive transverse shrinkage, particularly a positive shrinkage of up to +5 % in the transverse direction.

Thus Huguen most certainly does not teach or suggest advantageous inventive films having a negative transverse heat shrinkage of from about 5 to 8 %, as recited in Claim 23.

Nor does Huguen teach or suggest advantageous inventive films which are metallized, as recited in Claim 22. Huguen instead clearly teaches away from films containing metal layers.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of Huguen, considered either alone or in combination with the remaining art of record.

Applicants respectfully reiterate that Tyson does not cure the deficiencies in Huguen.

Tyson is generally directed to a method for covering furniture by heat-shrinking thereon a heat-shrinkable laminate (page 1, lines 10 through 20) obtained from a laminate. The laminate comprises a layer of non-woven fabric and a layer of flexible thermoplastic orientable material, which may comprise, for example, polypropylene and may be prepared by any desired method, for example casting (page 1, lines 40 to 62). There is no indication in Tyson that the flexible thermoplastic orientable layer is a rigid layer. There are also no details provided as to the conditions used to form the flexible thermoplastic orientable material.

Tyson does refer to several temperatures associated with his laminates, however. The laminate may be deformed at a temperature as low as 110 °C, for example. (page 2, lines 8 - 12). In contrast to the opinion of the Office Action, Tyson repeatedly indicates that heat shrinkage of the deformed laminate is at a laminate temperature of 70 °C (page 2, lines 1 -3 and 59 - 64). The example illustrating Tyson's invention (page 2, lines 65 to 92), merely discloses a shrink-back property, i.e. a positive shrinkage, of 10 to 15 % in each of the two directions.

Applicants respectfully submit that Tyson does not teach or suggest calendaring of plastics film alone at temperatures of from 180 to 60 °C, as recited in the claims as-amended. Tyson, silent as to the precise conditions by which its flexible thermoplastic material is formed,

instead teaches the deformation of its fabric-containing laminate at temperatures ranging from 110 to 140 °C. Applicants further respectfully submit that to modify Tyson so as to avoid its required fabric would render it unfit for its intended purpose.

Applicants respectfully reiterate that Tyson further does not teach or suggest the inventive rigid polyvinyl chloride films having a positive heat shrinkage at the recited 115 to 125 °C temperature range. The Office Action points to a temperature of 120 °C at Tyson, Page 2, lines 67 through 94. Applicants respectfully submit that the cited passage notes a stretching temperature for the laminate of 125 °C (page 2, lines 74 – 76) and a shrinkage-treatment air temperature of 110 °C yielding a laminate shrinkage temperature of 70 °C (page 2, lines 87 – 94). Tyson further discloses that the fabric-containing laminate may be deformed at temperatures of up to 140 °C. (page 2, lines 6 – 13). Tyson does not, however, teach or suggest films having a positive heat shrinkage at a temperature of 115 to 125 °C. As noted above, Tyson instead repeatedly indicates a laminate shrinkage temperature of 70 °C.

And Tyson, whose example discloses a maximum of 15% positive shrinkage in either direction, most certainly fails to teach or suggest the recited 40 to 60 % positive heat shrinkage.

Nor does Tyson teach or suggest calendered plastics film composed of rigid polyvinyl chloride having a width up to about 2010 mm.

Tyson, disclosing only positive heat shrinkages, can not teach or suggest advantageous inventive films having a negative transverse heat shrinkage, such as recited in Claim 2. And Tyson most certainly can not teach or suggest advantageous inventive films having a negative transverse heat shrinkage of from about 5 to 8 %, as recited in Claim 23.

Tyson also fails to teach or suggest advantageous inventive films which are metallized, as recited in Claim 22.

And Tyson, requiring a fabric within its laminate, clearly can not teach or suggest advantageous inventive films consisting essentially of at least one rigid polyvinyl chloride film and, optionally one or more of metallization, coating, lacquer and printing, as recited in Claim 24.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of Tyson, considered either alone or in combination with the remaining art of record.

There would have been no motivation to have combined Hughen and Tyson. Hughen is directed to single ply labels that maximize functional battery volume. Tyson is directed to a method for covering furniture. These are altogether different fields of endeavor and problems solved, to say the least. The Office Action is indulging in a hindsight analysis to conclude that Hughen would look to Tyson for use of hot air ovens. Applicants further respectfully submit that the Office Action is incorrect in its assertion that hot air ovens are necessarily associated with lower cost and ease of operation in comparison to the hot air knife of Hughen.

Furthermore, Applicants respectfully reiterate that there would have been no motivation for the combination because the films of Tyson would render Hughen unfit for their intended purpose. More specifically, Applicants respectfully submit that Tyson's shrink-back property of 10 to 15 % would be too small for the use as the single ply label in Hughen. Thus it would not have been obvious to a person of ordinary skill in the art at the time of applicant's invention was made, to have provided a calendered film with Tyson's positive heat shrinkages of 10 to 15 % in both directions, as the heat shrink film of Hughen.

However, even if Applicants had combined Hughen and Tyson (which they did not), the claimed invention would not have resulted.

In particular, the combination would not have resulted in the claimed calendered, rigid polyvinyl chloride films having a 40 to 60% positive heat shrinkage at a temperature of 115 to 125 °C, as recited in Claim 1.

Nor does the combination teach or suggest such calendered plastics film composed of rigid polyvinyl chloride having a width up to about 2010 mm.

The combination likewise fails to teach or suggest advantageous inventive films having a negative transverse heat shrinkage of from about 5 to 8 %, as recited in Claim 23.

The combination also fails to teach or suggest advantageous inventive films which are metallized, as recited in Claim 22. Huguen clearly teaches away from such films, as noted above.

And the combination clearly does not teach or suggest advantageous inventive films consisting essentially of at least one rigid polyvinyl chloride film and, optionally one or more of metallization, coating, lacquer and printing, as recited in Claim 24. Tyson clearly teaches away from such films, as noted above.

Accordingly, Applicants respectfully submit that Claims 1 through 3, 5, 7 and 9 through 17 are patentable in light of Huguen and Tyson, considered either alone or in combination.

Claims 12, 14 and 17 are likewise patentable over the foregoing references in view of Yoshiga.

In contrast to the moderate shrink films of the invention, Yoshiga is directed to film which is required to shrink more than 60 % (Abstract, col. 1, lines 39 to 42). In fact, the films of Yoshiga may shrink more than 80 %, if the film has been stretched at a total of stretch ratio in the

longitudinal direction and transverse direction of 5.5 to 7.0 times. Yoshiga merely generically notes that its films may have "excellent" optical characteristics (col. 2, line 54).

Yoshiga, requiring its films to have a greater shrink than 60 %, does not teach or suggest the moderate shrink films recited in Claims 12, 14 and 17.

Yoshiga, generically noting excellent optical characteristics, further fails to teach or suggest the inventive glass-clear films, recited in Claim 12.

And Yoshiga most certainly does not teach or suggest applying a protective covering film composed of rigid polyvinyl chloride to the upper side of the inventive films, as recited in Claim 17.

Applicants respectfully reiterate that there would have been no motivation to have combined Hughen, Tyson and Yoshiga. Hughen is directed to single ply labels. Tyson is directed to a method for covering furniture. Yoshiga is directed to films whose composition and process conditions are chosen to impart greater than 60% shrinkage. These are altogether different fields of endeavor and problems solved, to say the least.

However, even if combined (which Applicants did not) the Claims 12, 14 and 17 would not have resulted.

The combination more particularly fails to teach or suggest the moderate shrink films recited in Claims 12, 14 and 17. In fact, Yoshiga teaches away from such films by instead requiring greater than 60% shrinkage in its films.

Nor does the combination teach or suggest the inventive glass-clear films recited in Claim 12.

And the combination most certainly does not teach or suggest applying a protective covering film composed of rigid polyvinyl chloride to the upper side of the inventive films, as recited in Claim 17. In fact, Huguen, directed to single ply shrink films, clearly teaches away from such advantageous multi-layered embodiments.

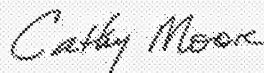
Accordingly, Applicants respectfully submit that the claimed invention is likewise patentable over Huguen, Tyson and Yoshiga, considered either alone or in combination.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1 through 3, 5, 7, 9 through 17 and 22 through 24 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,



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